Kristen Kennelly

Review for N111 exam #2

Chapter 20: Drugs for Degenerative Diseases of the Nervous System

* Parkinson’s Disease
  + Progressive loss of dopamine in the CNS causing tremor, muscle rigidity, and abnormal movements and posture
* Symptoms of Parkinson’s Disease
  + Tremors
    - Hands and head develop a palsy-like motion or shakiness when at rest
    - “pill-rolling” is a common behavior in progressive state, in which patients rub the thumb and forefinger together as if a pill were between them.
  + Muscle rigidity
    - Stiffness that resembles arthritis
    - Patients have difficulty bending over or moving limbs
  + Bradykinesia
    - Most noticeable
    - Difficulty chewing, swallowing, or speaking
    - Difficulties initiating movement and controlling fine muscle movements
    - Walking becomes difficult
    - Patients shuffle their feet without taking normal strides
  + Postural instability
    - Patients may be humped over slightly
    - Easily lose their balance
    - Stumbling results in frequent falls with associated injuries
* The goal of pharmacotherapy for Parkinson’s disease is
  + Increase ability of the patient to perform normal ADLS
    - Eating, walking, dressing, and bathing
  + Does not cure but symptoms may dramatically be reduced in some patients

|  |  |  |
| --- | --- | --- |
| **Dopaminergic Drugs Used for Parkinsonism** | | |
| Drug | Adverse Effect/Serious Adverse Effect | Etc. |
| 1. Carbidopa-levodopa (Sinemet) 2. Levadopa (L-dopa, Larodopa) 3. Ropinirole hydrochloride (Requip) | * Constipation * Orthostatic hypotension * Choreiform * Involuntary movements * Acute MI * Shock * Neuroleptic malignant syndrome * Agranulocytosis * Depression with suicide tendencies * EPS * Fulminant liver failure * Severe hepatocellular injury |  |

* Levodopa (Larodopa)
  + Actions & uses
    - Restores the neurotransmitter dopamine in extrapyramidal areas of the brain which relieves some Parkinson’s symptoms.
    - Levadopa is often combined with other medications, such as carbidopa, to increase its effect.
      * Prevents enzymatic breakdown as well.
    - Up to 6 months may be needed to achieve max therapeutic effects.
  + Drug-drug interaction
    - Antacids containing magnesium, calcium, sodium bicarbonate may increase levadopa absorption, which could lead to toxicity. Pyridoxine reverses antiparkinsonism effects of levadopa.

|  |  |
| --- | --- |
| **Anticholinergic Drugs and Drugs with Anticholinergic Activity Used for Parkinsonism** | |
| Drug | Adverse Effect/Serious Adverse Effect |
| 1. Benztropine mesylate (Cogentin) 2. Diphenhydramine hydrochloride (Benadryl) | * Drowsiness * Tachycardia * Hypotension * Paralytic ileus * Cardiovascular collapse |

* Patients receiving levodopa (Larodopa) or levodopa with carbidopa (sinemet) (Page 262, whole page! )
  + Implementation
  + **Interventions and (Rationales)**
    - Continue to monitor vital signs. Take blood pressure lying, sitting, and standing to detect orthostatic hypotension. Be particularly cautious with older adults, who are at an increased risk for hypotension. Notify the healthcare provider if blood pressure decreases beyond established parameters or if hypotension is accompanied by reflex tachycardia. (Orthostatic hypotension is a common adverse effect and may increase the risk of falls or injury.)
    - Monitor for behavior changes. (Drug therapy may increase the risk of agitation, confusion, depression, or suicidal thoughts and may increase other mood disturbances such as aggressive behavior.)
    - Carefully evaluate and report dose-related symptoms such as increased tremors and rigidity before the next dose is due or greatly increased symptoms unrelated to the timing of the dose. (The return or gradual increase of symptoms as the next dose comes due may signal a “wearing off” time and the dose may need to be increased, the interval of dosage adjusted, or an adjunctive drug added. A significant and sudden increase in symptoms may signal an overdose or “on-off” phenomenon where symptoms dramatically increase. If symptoms are significant, hospitalization may be required to assess for the rationale behind the exacerbation.)
    - Evaluate nutritional intake. (Absorption of levadopa decreases with high protein meals or high consumption of foods or vitamins that contain vitamin B₆ (pyridoxine). Symptoms may dramatically increase if absorption is impaired as dose does not adequately absorb during time expected.)
    - Monitor hepatic and renal function labs periodically. (A decrease in these functions may slow the metabolism and excretion of the drug, possibly leading to overdose or toxicity.)
    - Monitor for other drug-related changes. (The drug may cause urine and perspiration to dark in color.)
    - **Patient understanding of drug therapy:**
      * Use opportunities during administration of medications during assessments to discuss the rationale for drug therapy, desired therapeutic outcomes, most commonly observed adverse effects, parameters for when to call the health care provider, and any necessary monitoring for precautions. (Using time during nursing care helps to optimize and reinforce key teaching areas.)
    - **Patient self-administration of drug therapy:**
      * When administering the medications, instruct the patient, family, or caregiver in the proper self-administration of drugs and the need for regular, consistent dosing. (Utilizing time during nurse-administration of these drugs help reinforce teaching.)
* Alzheimer’s Disease (AD)
  + Dementia
    - Degenerative disorder characterized by progressive memory loss, confusion, and an inability to think or communicate effectively.
  + Causes
    - Multiple cerebral infarcts
    - Severe infections
    - Toxins
  + Gene defects on chromosomes 1, 14, and 21.
  + Chronic inflammation and excess free radicals may cause neuronal damage
  + Amyloid plaques and neurofibrillary tangles were found within the brain at autopsy, and present in nearly all patients with AD.
  + Drugs for Alzheimer’s Disease
    - Drugs are used to slow memory loss and other progressive symptoms of dementia.
    - Benztropine (Cogentin)
      * Contraindications
        + Narrow angle glaucoma
        + Myasthenia gravis
        + Obstructive diseases of the genitourinary and GI tracts.
    - Donepezil hydrochloride (Aricept)
      * Serious Adverse Effect:
        + Hepatoxicity